# MINUTES of the

# FIFTH MEETING

# of the

# SCIENCE, TECHNOLOGY AND TELECOMMUNICATIONS COMMITTEE

# November 9-10, 2009 Room 322, State Capitol Santa Fe

The fifth meeting of the Science, Technology and Telecommunications Committee was called to order at 10:00 a.m. on Monday, November 9, 2009, by Representative Roberto "Bobby" Gonzales, chair, in Room 322 of the State Capitol in Santa Fe.

**Present** 

Rep. Roberto "Bobby" J. Gonzales, Chair

(Nov. 9)

Sen. Stephen H. Fischmann, Vice Chair

Rep. Janice E. Arnold-Jones

Sen. Vernon D. Asbill

Sen. Dede Feldman

Rep. Debbie A. Rodella

Rep. Nick L. Salazar

Rep. Luciano "Lucky" Varela

Absent

Sen. Kent L. Cravens Sen. Phil A. Griego Sen. Linda M. Lopez

Rep. Jane E. Powdrell-Culbert

Rep. Richard D. Vigil

**Advisory Members** 

Sen. Carlos R. Cisneros

Rep. Karen Giannini

Rep. Ben Lujan

Sen. Richard C. Martinez

Rep. Kathy A. McCoy

Rep. Danice Picraux

Rep. Don L. Tripp

Rep. Jeannette O. Wallace

Sen. Mark Boitano Sen. William H. Payne Sen. John M. Sapien

(Attendance dates are noted for members not present for the entire meeting.)

# **Guest Legislator**

Rep. Dennis J. Roch

The guest list is in the original meeting file.

# Staff

Gordon Meeks

Jeret Fleetwood

# Monday, November 9

# **Medical Isotopes**

Scott Burchiel, director of the Center for Isotopes and Medicine (CIM), and Robert Atcher, Los Alamos National Laboratory (LANL), addressed the committee on the anticipated shortage of technetium (moly/Tc-99) and its implication for health care. Dr. Atcher said that the main North American reactor responsible for Tc-99 production is off-line due to a leak. He said eight million medical procedures a year are dependent on this material. He told the committee that the Petten reactor in the Netherlands was also off-line for two months and is planning to be off-line again in 2010, so even backup sources for the material are unavailable. The material is used primarily to address the needs of heart patients and for patients with cancers that can spread to the bone. LANL is working on four projects that will expand the nation's capability to produce Tc-99, but none of these projects will be producing the material in adequate quantities for at least two more years. The Society of Nuclear Medicine is working bilaterally (with Canada) and internationally to address the consequences of the shortage. The reactor in Canada is 52 years old, close to the end of its life, and it needs to be replaced regardless of its current status.

# Points of committee discussion were:

- possibility of dual use of reactors;
- potential to retool an existing reactor at the University of Missouri;
- foreign sources of radiological material posing problems for the Department of Homeland Security;
- total number of reactors in the United States;
- \$150 million to \$200 million cost for a new reactor to produce medical isotopes;
- 60 percent completion on reactivation of Sandia National Laboratories' reactor;
- shortage of trained reactor operators;
- special and unusual characteristics of Tc-99;
- regulations governing and licensing a new reactor and regulating the material;
- market for Tc-99 (\$150 million a year);
- importance to health care;
- history of the Canadian reactor;
- Food and Drug Administration approval for distribution of the material;
- medical isotopes group near Hobbs; and
- New Mexico's unique position to develop nuclear-related enterprises.

Dr. Burchiel told the committee that the CIM recently received a \$1 million grant from the Keck Foundation. He said that this money, together with a grant from the Department of Energy, will allow the center to obtain an imaging system using positrons and a gallium-68 generator. In collaboration with Lovelace Healthcare, the center will be imaging estrogen receptor dynamics at the University of New Mexico's (UNM) new cancer center. He said the CIM has also entered into a 15-year commercial partnership with Siemens.

Points of committee discussion were:

- cost savings for patients negotiated by Dr. Willman from Siemens; and
- methods of producing isotopes.

# **Telecommunications Competition and Facility Relocation Cost Recovery**

Loretta Armenta, Leo Baca and Roman Maes, representing Qwest, requested committee endorsement of legislation. They summarized previous testimony that new technologies make it increasingly difficult for the company to remain competitive in a market mostly unregulated by the Public Regulation Commission (PRC), such as wireless phone companies and voice over internet protocol (VOIP). Qwest is losing roughly 5,000 residential lines per month. Legislation to help remedy this situation was introduced during the last session to allow phone rate deregulation for intrastate services while retaining PRC authority to regulate other aspects of the industry. Senate Bill 445 failed to pass during the 2009 session. The presenters asked the committee to endorse essentially the same legislation this session. The regulatory reform legislation eliminates subjectivity in the existing statute and establishes a defined mechanism to guide the PRC, simplifying the process and reducing costs to the state and telecommunications companies.

# Points of discussion were:

- the number of wireless carriers in New Mexico;
- more wireless phones than landlines now in the state;
- VOIP and cable telecommunications options;
- relationship to federal regulations;
- unfair process in the legislative session;
- Qwest's loss of 6,000 customers per month;
- percentage of the state not covered by cellular service that relies on landlines;
- addressing issues as much as price;
- consumer choice;
- bundling capacity of Qwest;
- effect on open-access broadband competition;
- Qwest position on net-neutrality;
- investments requiring profitability;
- partnering with the state for broadband coverage; and
- position of the PRC on the bill.

The presenters also asked the committee to endorse a bill to provide for recovery of costs to relocate lines in public rights of way. An identical bill died last year in the last 30 minutes of the session on the house floor. They said that Qwest is not rate-of-return regulated. Other utilities regulated by the PRC are rate-of-return regulated and are allowed to recover costs or relocation of public right-of-way facilities through their rates.

The speaker of the house appointed Representative McCoy as a voting member, for purposes of this meeting, to replace an absent voting member.

After a suggestion was made and accepted to limit costs, the committee voted to endorse both bills.

# Federal Communications Commission (FCC) Narrowband Mandates

Jim Hand, Gila Regional Medical Center, John Martinez, deputy secretary of the Homeland Security and Emergency Management Department, and Tom McQuillan, deputy secretary of the Department of Information Technology (DoIT), summarized FCC Part 90 UHF/VHF Radio Systems narrowbanding mandates requiring all Part 90 business, educational, industrial, public safety and state and local government VHF (150-174 MHZ) and UHF (42-512 MHZ) private land mobile radio (PLMR) licensees to convert their radio system operations from legacy wideband (25 KHz) to narrowband (12.5 KHz) or the equivalent spectrum utilization by January 1, 2013. The FCC's mandates require that all wideband-only conventional or trunked VHF and UHF radios, including handheld portables, vehicle-mounted mobiles, dispatcher stations, wireless data, telemetry or supervisory control and data acquisition (SCADA) link radios (called subscriber radios), and any associated wideband-only conventional or trunked base or repeater stations (called infrastructure radios), be replaced and operate in narrowband emission mode prior to the 2013 date to continue legal use of Part 90 radio frequencies. Upon that date, FCC radio system licenses need to have been modified to reflect the change to narrowband emissions and operation.

Over the last several years, many licensees have started the narrowband migration process by deploying dual-mode subscriber radios through an attrition process. However, this process has addressed only the first step of a multi-step process.

The presenters told the committee that it is essential that the state take a leading role in developing a migration plan to include all state and local agencies and institutions, as well as the development of an adequate budget, to address the next steps necessary to complete the narrowband migration process and become fully FCC compliant.

# The committee discussed:

- need for one agency to take the lead;
- coordination and program management elements;
- the FCC's authority as emergency frequencies regulator;
- federal unfunded mandates:
- the estimated total cost to the state of \$1.4 million;
- the loss of licenses being the penalty for being out of compliance;
- potential interference with traffic signals;
- a state plan;
- specific steps and schedule to meet the requirements by 2013;
- terms of the licenses;
- that two-thirds of the state is currently out of compliance;
- the fiscal impact on small communities;

- the amount of stimulus money for narrowbanding and broadband mapping (\$1.8 million);
- the role of DoIT;
- streamlining government without a major impact on services; and
- the difference between broadband and narrowband widths on the radio frequency dial.

The committee voted to endorse a memorial asking the departments of information technology, homeland security and emergency management and finance and administration to cooperate in development of a plan for the state's response to the FCC's mandate.

The committee approved the minutes of its previous meeting.

#### **Telecommunications in Health Care**

Dr. Dale Alverson, professor at the UNM Health Sciences Center, described for the committee some benefits of telehealth services. He said that telehealth can transform systems of care, provide a more efficient distribution of limited resources, increase access and close gaps in health care, foster knowledge sharing, expand the health care work force, improve health and wellness and decrease costs. The goal of telehealth is to make health care ubiquitous through handheld wireless communications devices. Telehealth will be used in case reviews and consultation, direct patient care, family visitation and trauma triage.

The committee asked about:

- the air card deployment;
- FCC rules on telemedicine;
- funding for health care providers;
- the status of a health information technology fund;
- other financing mechanisms;
- technical means for interconnections;
- Medicaid/Medicare services disallowance of stored and forwarded technologies;
- the matching of appropriate technologies with specific situations; and
- the stroke program.

# Algae Biofuels Commercialization by Sapphire Energy

Tim Zenk, vice president of Sapphire Energy, and Bryn Davis, New Mexico operations manager, told the committee that the company was established in 2007. The company has 140 employees in California and Las Cruces, New Mexico. Sapphire Energy proposes to develop the first commercial algae facility of its kind in New Mexico. The company is backed by investors and bankers, including The Wellcome Trust, ARCH Venture Partners, Venrock Associates, Cascade Investment, LLC, Deutsche Bank and Square 1 Bank and has raised over \$100 million to commercialize algae as the leading source of drop-in replacement transportation fuels. The company now holds over 230 patents and applications spanning the entire value chain — from strain development, cultivation, harvesting and oil extraction to refining. The company holds patents over the entire genome of the algae chloroplast that gives it control over everything

from photosynthesis to the profile of oils produced by the algae to the environmental conditions algae can grow in. Its goal is to become the world's leading producer of renewable fuels as well as the leading producer in New Mexico. The technology is compatible with the nation's existing energy infrastructure, including today's vast network of refineries, pipelines and terminals and the existing fleet of cars, trucks and jets. These fuels can be grown on marginal desert lands and in brackish or salt water. They have a low carbon impact and are scalable in the near term and cost-competitive in the long term. Such fuels are called "green crude".

The presenters said that algae is one of nature's most efficient photosynthetic organisms, has a short growing cycle and does not require usable farmland or potable water. The environmental benefits are dramatic. The production of algae consumes enormous amounts of carbon dioxide (CO2) from both industrial and atmospheric sources, they testified. The production of one gallon of green crude will consume about 30 pounds of CO2. This provides a "two for one" benefit by using the CO2 emitted by a facility such as a coal-fired electric utility as a feedstock for the production of transportation fuel. Sapphire Energy successfully produced 91-octane gasoline last year and has participated in a test flight with a Boeing 737 twin-engine aircraft. The algae-based jet fuel met all performance standards and actually burned four percent more efficiently than the petroleum-based fuel. The test pilot said that the engine performance was "textbook". Sapphire Energy provided the gasoline derived from algae grown here in New Mexico to power a gasoline car on a 10-day cross country trip from California to New York.

The company operates a research and development (R&D) facility in La Jolla, California, a 100-acre R&D facility in Las Cruces, New Mexico, and will be breaking ground on an additional 300 acres of processing capacity in rural New Mexico by the end of this year. The company plans to be producing one million gallons of fuel per year by 2012, more than 100 million gallons by 2018 and one billion gallons by 2025. It is expected that, by 2050, algae-based fuel can replace more than 25 percent of conventional petroleum. Green crude will create thousands of green collar jobs, with nearly 750 direct and indirect jobs in rural New Mexico in construction and operations, as well as multiplier job impacts. The algae industry estimates that over the next three or four years, the production of algae-based fuel will create almost 12,000 direct jobs and another 30,000 indirect jobs.

#### The committee discussed:

- the size of ponds used to grow algae (eight-acre units);
- reuse or recycling of water for algae growth;
- price comparisons with new sources of petroleum;
- cycle time for commercial production (14-15 days);
- use of existing pipelines to existing refineries;
- comparison in BTUs between barrels of algae-produced fuel and petroleum-based fuel;
- benefits for New Mexico by growing and processing algae-produced fuel;
- lining of ponds;
- evaporative losses;

- open-pond concept compared to contained plastic bags;
- preference of non-potable water;
- potential environmental issues;
- 70 percent less CO2 emissions in the process of growing, refining and burning algae fuels;
- reuse of CO2 from conventional industry;
- location and surrounding land use;
- amount of water needed;
- potential use of produced water from oil and gas operations;
- benefit of using brackish water (reduces competitive organisms to algae);
- advantages of high elevations of New Mexico; and
- use of algae to clean water.

# Tuesday, November 10

# SunZia Southwest Transmission Project; Transporting New Mexico's Renewable Energy to Western Markets and Customers

Tom C. Wray, project manager, told the committee that the SunZia Project is the first proposed 500 kilovolt transmission line in New Mexico. He said SunZia will provide a pathway for New Mexico's renewable energy resources to reach western markets and customers. Currently, these resources are too remote from the existing transmission infrastructure and are rendered undevelopable. SunZia will also benefit the state, because its interconnections to New Mexico's transmission grid will increase interstate power transfer capacity and enhance the state's operating reliability, he said. There are six entities participating in the development phase of the SunZia Project, including Energy Capital Partners, Southwestern Power Group, Shell WindEnergy, Salt River Project, Tucson Electric Power and Tri-State Generation and Transmission Association. SunZia's proposed route from New Mexico to Arizona is approximately 460 miles with about 2,400 miles of alternate routes under evaluation. The proposed project consists of up to two 500 kilovolt alternating current (kVAC) lines. A hybrid configuration of one 500 kVAC line and one 500 kilovolt direct current line is being considered. Mr. Wray testified that the project will interconnect with at least five substations — two in Arizona and three in New Mexico. The eastern terminus of the project is at a proposed substation in Lincoln County, New Mexico, and the western terminus is at the proposed Pinal Central Substation or Tortolita Substation in Pinal County, Arizona. The proposed route in New Mexico is estimated to be 290 miles on Bureau of Land Management (BLM) and state lands. Fifty-two miles may be on fee property. The typical right-of-way width (ROW) for one 500 kVAC line is approximately 200 feet. The project may require up to 1,000 feet of ROW to accommodate two lines and a safe, operable separation between the parallel structures. The steel tower structures are typically 130 to 160 feet in height. The distance between structures will range from 1,300 to 1,500 feet, depending on terrain conditions. He described the technical configurations of support towers and their placement.

Mr. Wray said the prospective transmission lines will enable New Mexico to transport its renewable energy to other western states that are required to meet renewable portfolio standards mandated by their public utility commissions. New Mexico regulated utilities must consume enough renewable energy to account for 20 percent of their electric sales by 2020; Arizona has targeted 15 percent by 2025; California must achieve 20 percent by 2010 and 33 percent by 2020; and Nevada has targeted 25 percent by 2025. The transmission lines will carry power generated by wind farms in Torrance, Lincoln, De Baca and Guadalupe counties and solar development facilities in Hidalgo and Luna counties. The BLM is the lead federal agency for completing an environmental impact statement (EIS). He described public scoping meetings conducted for the project and answered questions.

#### The committee discussed:

- use of eminent domain for transmission lines (SunZia does not have that power in New Mexico);
- capacity of lines to carry other sources of electric power, including nuclear;
- inclusion of storage capacity;
- that the ratepayers are the prospective source of revenue to pay for the lines;
- public hearings and incorporation of public comments in the plans;
- cooperation of the Department of Defense for right-of-way access through military bases:
- non-continuous transmission characteristics of renewable energy sources;
- simple cycle gas turbines as backup to renewable sources;
- four corners power generation plants connectivity to the SunZia Project;
- the Western Electricity Coordinating Council;
- public agency partners in the project (Salt River Project, Tucson Electric and Tri-State Transmission);
- open access transmission tariff regulation;
- terms of public lands easements;
- that the best place to put generation is near a load center (demand) rather than at the mine mouth as in coal-powered generation stations;
- interconnection with "High Plains Express";
- direct current compared to alternating current and location of converters for integrating hydropower direct current into the grid;
- efficiency of direct current and need to convert the whole grid and every electric device;
- low-frequency vibrations associated with large wind turbines;
- renewable portfolio standards addressing annual kilowatt hour sales; and
- PRC regulation of renewable portfolio standards generated for power out of state.

# **Geospatial Task Force Findings in Response to House Joint Memorial 81**

Marlin Mackey, secretary of information technology, Mike Baca, DoIT, and Mike Engels, UNM, summarized the findings and recommendations of the task force, which include establishing:

- 1. a New Mexico State geospatial information officer at the DoIT;
- 2. the New Mexico Geospatial Data Center as the primary node of a decentralized system of distributed data stewards using the existing data repository located at UNM;
- 3. geospatial services that provide support services for geospatial data visualization, development, integration and analysis and providing funding for them; and
- 4. the New Mexico Geospatial Policy Council to provide policy for statewide geospatial data and services in support of statewide data acquisition, development and sharing.

The presenters told the committee that a grant for \$2 million from the federal government has been applied for to begin implementing these recommendations.

#### The committee discussed:

- what states now have the most sophisticated geospatial systems for New Mexico to learn from;
- ability of the public to use the state system, e.g., to find evacuation routes out of subdivisions in the event of emergencies;
- currency of data and maps;
- privacy issues;
- complexity of the memorial;
- data sharing among state agencies;
- consistent definitions of public and private data;
- security of privacy as legally required to carry over to contractors and subcontractors of the state; and
- designation of a compliance officer.

# New Mexico Renewable Energy Transmission Authority Proposed Legislation

Jeremy Turner, director, and Angela Gonzales, with the Renewable Energy Transmission Authority (RETA), asked for endorsement of RETA legislation that would:

- 1. allow the New Mexico Finance Authority (NMFA) to review projects for bonding;
- 2. allow the RETA to issue bonds above or below "par", similar to the NMFA's bonding powers; and
  - 3. add confidentiality language to the statute to protect proprietary information of clients.

# The committee discussed:

- previous endorsement of this legislation by the NMFA Oversight Committee;
- example of why a power generator would want confidentiality;
- legal definition of confidentiality and the actual scope of confidentiality;
- position of private landowners ("coalition of landowners") on confidentiality language;
- contents and goal of Senate Memorial 44;
- documentation or reliability and quality of renewable energy resources;
- collateral for RETA bonds;

- the RETA's role in or relationship to the SunZia Project;
- High Plains Express memorandum of understanding with the RETA and map of High Plains Express;
- eminent domain authority of the RETA;
- potential financing sources for high tension power lines other than the RETA;
- goal of reducing costs of renewable energy;
- other states with transmission authorities like the RETA (Colorado, Wyoming, North Dakota, South Dakota and Kansas); and
- time frame for building new transmission lines.

# Linking the Eastern and Western Grids

Phil Harris, managing partner and CEO of Tres Amigas, LLC, addressed the committee about his organization's efforts to connect the three U.S. asynchronous power grids through a direct current hub that can regulate the direction and level of power flows between the grids, thereby improving the efficiency of the transmission systems in all regions of the country. New Mexico is geographically located at the junction of the nation's three asynchronous electric transmission grids. It is also strategically placed at a place on earth where renewable energy resources (solar and wind in particular) could be harnessed to potentially generate 27 gigawatts of power. He said this project will provide economic incentives to further drive the growth of the nation's transmission grid by expanding opportunities for efficient transactions across currently inaccessible market regions. It will optimize the value of existing alternating current infrastructure by utilizing state of the art technology, and it will provide reliable and cost-effective transmission services consistent with the Federal Energy Regulatory Commission (FERC) standards and regional reliability requirements. He further stated that Tres Amigas will:

- 1. enable the buying, selling and physical delivery of electricity between participants in multiple grids;
- 2. optimize the performance of renewable energy sources by offering or creating options to form intermittent power across a broad geographic area;
- 3. promote the development of renewable energy projects by creating an opportunity for such projects to connect to multiple high demand load areas;
- 4. enable renewable energy to follow hourly demand fluctuations throughout a large portion of North America; and
- 5. integrate large-scale renewable resources by providing the capability to manage realtime power fluctuations that would otherwise exceed the capability of many existing balancing authorities.

The Tres Amigas SuperStation is located in an area of the country rich in renewable resources. The New Mexico State Land Office has granted Tres Amigas an option to lease 14,400 acres (22.5 square miles) for this purpose. He said a study commissioned by the Western Governors' Association ranked New Mexico's potential at number one for renewable energy generation capacity at 27 gigawatts. New Mexico could produce 70,573 gigawatt hours of renewable energy annually.

The anticipated economic impact of Tres Amigas is \$2.6 billion to local economies, including 1,460 new long-term jobs and \$130 million a year to local economies. The construction phase would create as many as 7,200 new jobs, and the operational phase would mean 380 new long-term jobs.

Comments and questions addressed:

- expansion capacity;
- superconductivity;
- land availability;
- overhead versus underground transmission lines;
- availability of stimulus money for investing in Tres Amigas;
- status of filing with the FERC;
- gathering lines;
- New Mexico's need for 5,000 to 6,000 miles of new transmission lines;
- electric energy storage technology;
- the need for new line capacity before investors will be willing to support more renewable energy generation;
- allocation of costs to finance these lines to ratepayers in New Mexico;
- national security issues;
- computer security;
- obsolescence of the current U.S. grid;
- total annual economic benefits to New Mexico;
- the steps needed to move the project forward;
- cost recovery;
- definition of confidentiality;
- wasted energy from converting direct current to alternating current;
- maximum capacity design (765,000 volts);
- Australia's conversion to direct current; and
- cost of converting the U.S. system from alternating current to direct current.

The committee voted to endorse in concept a memorial to request agencies to study the cost issue and make recommendations to the legislature for financing transmission line buildout.

Tom Bowles, the governor's science advisor, gave the committee a status report on the green grid initiative's effort to secure federal funding. He said the state has submitted a grant application to the DOE for a smart grid project. There have been 129 proposals submitted, and it is estimated that eight to 12 will be funded. The initial feedback is that New Mexico is well situated to compete for the money. The state is partnering with the government of Japan (which is committing \$20 million to the project if the federal government finances it), Intel, Hunt Energy and Galvin Energy. The Japanese foreign ministry seems to be earnestly lobbying the federal government to approve the proposal. The project will go forward even without the federal funding, since none of the other partners excluding Japan have qualified their support on federal funding.

Mr. Bowles said the project is a utility scale smart grid/green grid project to export New Mexico-generated renewable energy. It will attract green technology manufacturing companies utilizing intelligent manufacturing systems. He closed by saying that energy efficiency is the foundation for energy conservation.

#### The committee asked about:

- the relative higher cost of power as a disincentive for manufacturers to locate in New Mexico;
- an integrating organization to bring everything together;
- a potential industry cluster to share capitalization costs;
- the need for consistent policies as an essential foundation for stable economic development; and
- the need for a guarantee of government commitment to incentives.

# New Mexico's Energy Economy, New Mexico First Town Hall Report

Jennifer Salisbury, chair of New Mexico First's Energy Implementation Committee, summarized the town hall process of New Mexico First and the energy town hall's report. The overriding objective of the Town Hall on Energy is to create a diversified, innovative and resilient statewide energy system that supports long-term economic development for all areas in the state by capitalizing on New Mexico's inherent energy resources. The goal is to create a unifying energy strategy for New Mexico that will enhance and diversify economic development, tie together all related agencies and programs, energy sources and infrastructure and provide a framework for coordinated plans from each stakeholder, she told the committee. The participants at the town hall were eager to promote work force education and business models that incorporate new technologies, renewable energy, energy efficiency, conservation, public health, appropriate siting, environmental impact reduction and consumer choice. They felt that New Mexico must maximize its strengths in the development and supply of energy, for both export and internal consumption, while fostering social and geographic equity and opportunity. State policy should optimize a mix of incentives and financial instruments (private activity bonds, corporate bonds, equity, etc.) to implement the energy strategy on local and state scales, including both centralized and distributed approaches. It was felt that the first step should be the development of a detailed 20-year plan that might:

- show how to diversify New Mexico's economy and tax base to ensure the prosperity of New Mexicans in a wide range of possible futures (e.g., different energy price trends, different carbon pricing assumptions, different commodity prices, water availability, different federal scenarios and healthy communities);
- provide a roadmap for regulatory reform and policy integration across state government, including different departments and the PRC;
- have buy-ins from a wide range of stakeholders, including those not traditionally well represented;
- employ advanced analysis, including full life-cycle costing, to estimate the full range of impacts under different scenarios (e.g., tax revenue, job creation, investment costs,

- health costs and returns on investment, impacts on electric ratepayers, including lowand limited-income households, as well as those medically and otherwise disabled);
- address energy efficiency and conservation opportunities;
- consider how to create lasting jobs throughout the energy value chain from R&D to start-up companies, manufacturing, distribution, installation, operations and maintenance and maximizing local dollars staying in communities and the state;
- show how the proposed policies align with other state goals (e.g., environmental conservation, education, tourism, water quality, health, aesthetics and culture); and
- outline implications in all areas of public policy, including land-use policies and building codes, as they relate to energy use, generation and transmission.

The committee asked about the level of participation by employed people at New Mexico First town hall meetings.

The committee adjourned at 3:00 p.m.